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AMENDMENTS TO THE CLAIMS:

1-6. (Canceled)

7. (Amended) A method for improving adhesion of a polyimide surface by applying the brown oxide pretreatment composition to a brown oxide process, comprising the steps of:

- a) treating a printed circuit board with a brown oxide pretreatment composition for cleaning a copper surface and improving adhesion of a polyimide surface;
- b) water-washing the printed circuit board of a);
- c) pre-dipping the printed circuit board of b);
- d) forming a conversion coating on the printed circuit board of c);
- e) water-washing the printed circuit board of d); and
- f) drying the printed circuit board of e);

wherein the brown oxide pretreatment composition for cleaning a copper surface and improving adhesion of a polyimide surface used in step a) comprises:

5 - 15 g/L of a hydroxylamine;

190 - 210 g/L of a hydroxide compound;

at least one additive selected from 3 - 6 g/L of a cleaner adjuvant,

0.1 - 5 g/L of an antifoaming agent and 1 - 10 g/L of a precipitation inhibitor; and



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the balance of water.

8. (Original) A method for improving adhesion of a polyimide surface by applying the brown oxide pretreatment composition to a brown oxide process according to claim 7, further comprising a water-washing step following the pre-dipping step.

9. (Original) A method for improving adhesion of a polyimide surface by applying the brown oxide pretreatment composition to a brown oxide process according to claim 7, wherein the step a) of treating a printed circuit board with a brown oxide pretreatment composition is carried out at 30 - 90°C for 10 seconds - 10 minutes.

10. (Canceled)

11. (Currently amended) A method for improving adhesion of a polyimide surface by applying the brown oxide pretreatment composition to a brown oxide process according to claim 710, wherein the hydroxylamine is selected from the group consisting of monoethanolamine (MEA), diethanolamine (DEA), triethanolamine (TEA), 2-aminoethanol, N,N-bis-2-hydroxypropylethanolamine, N-oleylethanolamine and mixtures thereof.

12. (Currently amended) A method for improving adhesion of a polyimide

surface by applying the brown oxide pretreatment composition to a brown oxide process according to claim 710, wherein the hydroxide compound is selected from the group consisting of sodium hydroxide (NaOH), potassium hydroxide (KOH), barium hydroxide (BaOH), ammonium hydroxide, tetramethylammoniumhydroxide, tetraethylammonium-hydroxide, tetrapropylammoniumhydroxide and mixtures thereof.

13. (Currently amended) A method for improving adhesion of a polyimide surface by applying the brown oxide pretreatment composition to a brown oxide process according to claim 710, wherein the cleaner adjuvant is at least one compound selected from the group consisting of gluconic acid soda, polyglycol, ethoxylated fatty alcohol, polyethoxylated monoalkanolamide, EO/PO block copolymer and mixtures thereof.

14. (Currently amended) A method for improving adhesion of a polyimide surface by applying the brown oxide pretreatment composition to a brown oxide process according to claim 710, wherein the antifoaming agent is an alkylphosphate or fatty acid sulfate.

15. (Currently amended) A method for improving adhesion of a polyimide surface by applying the brown oxide pretreatment composition to a brown oxide process according to claim 710, wherein the precipitation inhibitor is selected from the group consisting of N-methyl-2-pyrrolidone, N-cyclohexyl-2-pyrrolidone, 2-pyrrolidone,

dimethylformamide, dimethyl acetamide, tetrahydrofuran, acetonitrile, dioxane, alcohol
and mixtures thereof